



THE UNIVERSITY  
OF ILLINOIS  
LIBRARY

370  
IL6e  
no. 38-47

EDUCATION

Return this book on or before the  
**Latest Date** stamped below.

University of Illinois Library

MAR 9 1963

MAR 18 1963

MAY 9 1963

MAR 19 1987

MAR 18 1987

FEB 15 1991

L161—H41





# UNIVERSITY OF ILLINOIS BULLETIN

ISSUED WEEKLY

Vol. XXIII

JUNE 1, 1926

No. 39

[Entered as second-class matter December 11, 1912, at the post office at Urbana, Illinois, under the Act of August 24, 1912. Acceptance for mailing at the special rate of postage provided for in section 1103, Act of October 3, 1917, authorized July 31, 1918.]

EDUCATIONAL RESEARCH CIRCULAR NO. 45

BUREAU OF EDUCATIONAL RESEARCH  
COLLEGE OF EDUCATION

## TEACHERS' OBJECTIVES

By

WALTER S. MONROE

Director, Bureau of Educational Research



THE LIBRARY OF THE

JUL 14 1926

UNIVERSITY OF ILLINOIS

PUBLISHED BY THE UNIVERSITY OF ILLINOIS  
URBANA



370  
Ilbe  
no. 45  
cop. 2

## TEACHERS' OBJECTIVES

No argument is needed to prove that in performing the many phases of his task, a teacher should be guided by a clear understanding of the objectives or goals to be attained by the students under his instruction. However, one who has not made an extensive study of the topic is not likely to comprehend fully the meaning of the phrase, "a clear understanding of objectives." In discussing the aim of education, we frequently use such terms as "health," "wealth," "citizenship," "character," "a well-disciplined mind," "adaptation to environment," "culture," "worthy use of leisure," "social efficiency," "appreciation" and the like. In so far as these words and phrases have meaning, they describe the conduct of persons who have been "educated," and hence are ultimate and final objectives rather than immediate goals to be attained by students of arithmetic, algebra, first-year Latin, geography, civics, physics, home economics, English literature, and so forth. For this reason such "high-sounding" terms cannot be very helpful to a teacher in arriving at a clear understanding of his immediate objectives.

**Typical statements of educational objectives.** The statement of educational objectives formulated by the Commission on the Reorganization of Secondary Education has become widely known under the title "Cardinal Principles of Secondary Education."<sup>1</sup> This formulation is epitomized in the statement that the "main objectives of education" are:

- |                                     |                          |
|-------------------------------------|--------------------------|
| 1. Health                           | 5. Citizenship           |
| 2. Command of fundamental processes | 6. Worthy use of leisure |
| 3. Worthy home membership           | 7. Ethical character     |
| 4. Vocation                         |                          |

A committee of the North Central Association of Colleges and Secondary Schools has given us a slightly different statement of objectives.

The ultimate aims stated in terms of disposition and ability may be summarized as follows:

1. To maintain health and physical fitness.
2. To use leisure time in right ways.
3. To engage successfully in vocational activities.
4. To sustain successfully certain definite relationships such as domestic, community, civic and the like.<sup>2</sup>

<sup>1</sup>"Report on Cardinal Principles of Secondary Education." (Commission on the reorganization of secondary education.) U. S. Bureau of Education Bulletin, 1918, No. 35. Washington, 1918. 32 p.

<sup>2</sup>"Report on Standards for reorganization of secondary school curricula, 1924." North Central Association of Colleges and Secondary Schools, March 20, 21, 22, 1924, p. 6.

**Difficulties in applying such formulations of educational objectives.** Certain difficulties become apparent when one attempts to apply such formulations of educational objectives in devising and selecting learning exercises. Phrases such as "ethical character," "health," "right habits of conduct," "appreciation," "life activities," and "citizenship" do not express concepts that a teacher is able to apply directly in deciding what learning exercises<sup>3</sup> to assign. Most teachers are able to associate only very general and frequently indefinite meanings with such "high-sounding" terms. A much more helpful formulation of educational objectives may be secured by specifying the abilities that students are expected to acquire as the result of doing the assigned exercises.

**The outcomes of learning activity.** Whenever a student engages in mental activity, there is a product or outcome, generally called "ability," which functions as a "control of conduct" on future occasions. Before a child has studied algebra, his response to an algebraic symbol, such as  $x^2$ , is not likely to be the correct one. If asked to read this symbol, he may say, "x with a small 2 above it." After he has studied algebra, that is engaged in certain learning activities, he is "changed." We describe the change by saying he has acquired certain abilities, so that when asked to read this symbol he will say, "x square." One outcome of his participation in certain learning activities in the field of algebra is a "control of conduct" which enables him to respond correctly to a request to read the symbol  $x^2$ .

If a student who has not studied physics is asked to solve a problem that requires the application of the "law of falling bodies," he will probably be unable to give a satisfactory response. When he masters the law of falling bodies in his study of physics, he is equipped so that he is able to apply it in solving problems. Learning the law of falling bodies means acquiring a control of conduct.

A person who has not studied music may be equipped with controls of conduct so that he is bored or even irritated by listening to the playing of a highly technical musical selection. Such a person may acquire other controls of conduct as a result of studying music so that his response to the rendition of a technical musical selection will be characterized by satisfaction and pleasure rather than by dissatisfaction.

---

<sup>3</sup>A "learning exercise" is anything students are asked to do as a means of educating themselves.



The change which has taken place may be described as the acquiring of the ability to appreciate a certain type of music.

The illustrations just given suggest that abilities differ. Ability to read "x<sup>2</sup>" provides a type of control of conduct different in certain respects from that represented by "ability to apply the law of falling bodies" or by "ability to appreciate a highly technical musical selection." Certain characteristics of the situations for which responses are provided and the nature of the process of responding furnish a basis for a classification of abilities.

**Types of outcomes considered as controls of conduct.**<sup>4</sup> The following analysis of the outcomes of learning activity is not perfect. The boundaries between the several rubrics are not well defined and the reader should bear in mind that psychologically all abilities have certain characteristics in common. However, the following classification will be helpful in considering certain problems relating to teaching.

**I. Specific habits; motor skills and fixed associations.** Under this head we place all those outcomes of the learning process which function as automatic or largely mechanical controls of conduct. Names, dates, events, and other facts which have been memorized belong to this class. In addition there are many habits which provide automatic motor responses. Examples of these are found in handwriting, the speaking of a foreign language, athletics, music, typewriting, and so forth. Specific habits provide ready-made responses to familiar situations.

**II. Knowledge; adaptive controls of conduct.** Under the head of knowledge we group those controls of conduct (abilities) that function in overcoming difficulties presented by new situations. We commonly refer to them as ideas, concepts, meanings, principles, and laws. The distinction between specific habits and knowledge is primarily on the basis of the type of situation for which a response is provided. If the situation is familiar and the person possesses a ready-made response, the control of conduct is called a specific habit. If the situation is new, that is if it presents a problem to be solved and a response is manufactured by reflective thinking, knowledge is the name given to the controls of conduct that function.

---

<sup>4</sup>The rubrics of abilities given here are similar to those given by:

BAGLEY, W. C. *Educational Values*. New York: The Macmillan Company, 1911, Chapters II, III, IV and V.

BAGLEY, W. C., and KEITH, J. A. H. *An Introduction to Teaching*. New York: The Macmillan Company, 1924, Chapter IX.

**III. General patterns of conduct.** An ideal may be thought of as a general pattern to which conduct will conform in a variety of situations. Ideals have been described as "master ideas." In addition to the intellectual element, the idea, there is an emotional element which adds power in controlling conduct. Neatness, honesty, patriotism, loyalty, altruism, and accuracy are names for certain common ideals.

Attitudes represent a number of less tangible but very important controls of conduct which furnish general patterns of conduct or "mind sets." When we describe a person as being "conservative," we mean that his thinking is characterized by caution and also by reluctance to accept new ideas. The word "radical" is used to designate the opposite type of mind or attitude. Other words which designate certain attitudes are scholarly, open-minded, prejudiced, independent, and judicial.

A similar kind of controls of conduct is commonly designated as "interests" or "tastes." An interest in or a preference for "Jazz" causes one to seek that type of music and to avoid other kinds. An interest in outdoor sports directs one's leisure activities. What is called "good taste" controls one in furnishing his home or in buying his clothes.

**Determination of educational objectives.** An approach to the determination of the immediate objectives is furnished by the principle that a teacher's immediate purpose is to cause his students to acquire certain abilities. "Formulating immediate objectives" means "determining the abilities they are to acquire." A number of workers in the field of curriculum construction have made a beginning in the identification of the particular abilities which our schools are expected to engender. For example, Bobbitt in his recent volume, "How to Make a Curriculum," lists a large number of abilities as objectives for the high school. Other workers, accepting the thesis that the general aim of education is to prepare children for efficient participation in the activities of adult life, have attempted to analyze the activities that adults now perform for the purpose of ascertaining what abilities are necessary for satisfactory participation. Thousands of pages of the writings of adults have been analyzed in order to determine what words children should be asked to learn to spell during their study of this subject in the elementary school. Masses of data have been collected and analyzed for the purpose of determining the types of arithmetical problems which adults find it necessary to solve. Hundreds of periodicals have been read for the purpose of determining the frequency of occurrence of allusions to geographical and historical facts. Elaborate investigations have been conducted in other fields for the purpose of determining the abilities which children should be asked to acquire in school.

Such curriculum studies are helpful but they provide only limited assistance to the teacher who is endeavoring to arrive at a clear understanding of the objectives to be attained by his students. They do not reveal the nature of the abilities to be acquired by them. For example, the determination of the words which adults use most frequently in written expression does not yield complete specifications of the abilities that students should acquire in the field of spelling. One way to spell words correctly is to consult the dictionary and copy the letters in the order given there. In this case "ability to spell" would mean "ability to find a word in the dictionary plus ability to copy the letters in the proper order." Of course such a definition of spelling ability is absurd for commonly used words but it is possible to define various degrees of fluency in the spelling of words used in written expression. Hence a list of the most commonly used words only partially specifies the abilities to be acquired by a study of spelling. The determination of the frequency of allusions to historical facts in periodical literature cannot reveal the precise nature of the historical abilities required for efficient reading of such material. In addition to determining what dates, persons, events and other historical facts should be learned, it is necessary to define what it means to *know* a fact. The job-analysis method of curriculum construction does not furnish this definition.

**A hierarchy of educational objectives.** The aim of education may be considered from several points of view which tend to form a sequence. The immediate objective of the teacher is to stimulate and direct his students so that they will acquire certain abilities such as, ability to multiply one integer by another, ability to solve quadratic equations of a specified type, ability to type from copy a specified number of words per minute, ability to translate certain passages of a foreign language, ability to apply principles of physics in solving problems, ability to plan and construct a table or chair in the shop, ability to organize information relating to a topic and present it effectively, and the like. Sometimes the teacher shifts his objective from abilities to be acquired to the learning activities in which he asks his students to engage. In such cases his efforts are focused on getting his students to do certain problems or laboratory exercises, to write themes or book reviews, and the like. This type of immediate objective has been described as "ground-to-be-covered" and frequently is thought of in terms of the pages of a textbook to be read, or a list of topics (usually expressed as an outline) to be studied.

Abilities are engendered by the school in order that the students may be equipped with controls of conduct for performing the duties of

adult life. Hence the future behavior or conduct of students may be considered as the *ultimate* objectives of education and has been defined in two ways; *first* by describing its general character or quality using such terms as socially efficient, good citizen, honest, trained mind, and the like, and *second*, by specifying the duties to be performed or the occasions for the functioning of controls of conduct. An illustration of stating ultimate educational objectives from the second point of view is furnished by the following enumeration of the classes of activities in which adults engage:

1. Language activities; social intercommunication.
2. Health activities.
3. Citizenship activities.
4. General social activities—meeting and mingling with others.
5. Spare-time activities, amusements, recreations.
6. Keeping one's self mentally fit—analagous to the health activities of keeping one's self physically fit.
7. Religious activities.
8. Parental activities, the upbringing of children, the maintenance of a proper home life.
9. Unspecialized or non-vocational practical activities.
10. The labors of one's calling.<sup>5</sup>

The four classes or orders of objectives described in the preceding discussion may be summarized as follows:

<b>Immediate Objectives</b>	}	<p><b>1. Learning activities to be engaged in.</b> This type of objective is usually described in terms of learning exercises to be done or "ground-to-be-covered."</p> <p><b>2. Abilities to be engendered.</b> When objectives are thought of in terms of "abilities to be engendered," the doing of exercises becomes a means to this end.</p>
<b>Ultimate Objectives</b>	}	<p><b>3. Future behavior described in general terms.</b><sup>6</sup> Using such words as citizenship, character, culture, and so forth.</p> <p><b>4. Duties or occasions for the use of abilities.</b> The relation between duties and "future behavior" may be described by saying that the terms, such as character, citizenship, social efficiency, and so forth used in describing future behavior specify in a general way how the duties of adult life are to be performed.<sup>7</sup></p>

<sup>5</sup>BOBBITT, FRANKLIN. *How to Make a Curriculum*. New York: Houghton Mifflin Company, 1924, p. 8-9.

<sup>6</sup>Objectives of this order may describe the behavior of an individual or the conduct of groups.

<sup>7</sup>The technique employed in determining the duties of adult life has been called "job analysis" or "activity analysis." The purpose of such analyses is to determine



This hierarchy of objectives provides a basis for classifying statements of aim and hence a means for indicating their merits for teachers. The "Cardinal Principles of Education" clearly come under the third order of objectives. Bobbitt's list of activities belongs under the fourth. Teachers should focus their attention upon the "abilities to be engendered" and they should always consider learning activity (the doing of assigned exercises) as a means to that end. The teacher, however, should not forget that the ultimate purpose of the school is to contribute to equipping students for socially efficient performance of the duties of adult life.

**How to state immediate objectives.** It is comparatively easy to state some immediate objectives in definite terms of ability to do. For example, in the case of silent reading the desired achievement may be described in terms of the rate of reading (words per minute) and the degree of comprehension as measured by some standardized test. In handwriting we have standards of achievement in terms of the rate of handwriting (letters per minute) and the quality as measured on some handwriting scale. The immediate objectives in stenography and typewriting may be stated in terms of rate and accuracy of performance.

In most high-school subjects it is not yet possible to describe the abilities to be engendered in such objective terms but the teacher will find it helpful to classify according to the following plan the abilities he is attempting to engender.

- I. Fixed controls of conduct (specific habits)
  - A. Motor skills
  - B. Fixed associations
- II. Adaptive controls of conduct (knowledge)
  - A. Perceptual or relatively concrete meanings
  - B. Abstract and general meanings or concepts
  - C. Principles
- III. General patterns of conduct (generalized controls)
  - A. Ideals
  - B. Attitudes
  - C. Interests and tastes

---

the duties that adults perform. After this has been done it remains to determine the relative importance of the duties revealed and also the behavior that is desirable in connection with each duty. For an account of the technique of job analysis see:

CHARTERS, W. W. Curriculum Construction. New York: The Macmillan Company, 1923, p. 352.



In addition to failing to distinguish between the different types of abilities, teachers frequently lack a clear understanding of other aspects of the abilities they are attempting to engender. For example, in arithmetic it is generally agreed that teachers are to engender the abilities necessary for making calculations with integers and, when requested, they state their objectives as being to engender ability to do column addition, ability to do addition with carrying, and so forth. Such analytical statements of objectives are good so far as they go but recent psychological studies indicate that the specific habits which students must acquire in order to be proficient in calculation are much more highly specialized than such statements imply. For example, ability to respond to  $7 + 5$  does not insure the ability to respond to  $17 + 5$ ,  $27 + 5$ , and so forth. If this is true, it is necessary that the teacher recognize not fifty nor even one hundred addition combinations but some three or four hundred different combinations. It now appears that there are several thousand specific habits (fixed associations) to be learned in the field of arithmetic and the teacher cannot be said to have a clear understanding of the objectives in this field until he knows what constitutes a specific habit and also the general classes of specific habits to be learned.

**Relative importance of the rubrics of abilities.** Although it is not possible to give a definite answer to the question implied in the paragraph heading, certain considerations may be noted. The elementary school is responsible for engendering a large number of specific habits in reading (both oral and silent), arithmetic, handwriting, spelling, and language. This may be considered the chief responsibility of the elementary school, at least up until the end of the sixth grade, but it is also expected to contribute to the engendering of knowledge and general patterns of conduct.

In the high school the number of specific habits to be engendered is relatively small except in algebra, foreign language, typewriting, stenography, practical and fine arts, and athletics. In the other subjects of instruction knowledge represents an important rubric of objectives. The engendering of ideals and attitudes is also an important responsibility of the high school. In fact it may be argued that this constitutes its chief responsibility. However, the acceptance of this thesis would not mean that high-school teachers should limit their objectives to the engendering of general patterns of conduct.

The fact that knowledge is an adaptive control of conduct gives it importance. Obviously it is not possible to anticipate all of the situations to which the adults of the future will be called upon to respond

and to equip children for meeting them by engendering only fixed controls of conduct. Even if all the possible situations of the future were known, some of them would occur so infrequently in the lives of most persons that it would be inadvisable to attempt to engender ready-made responses for them. However, the possession of knowledge is not sufficient to insure satisfactory conduct when confronted with novel situations. The functioning of knowledge is governed by ideals and attitudes. These constitute "mindsets" that form the basis of satisfaction or annoyance in the functioning of knowledge elements in the solving of problems. A person who is grossly lacking in ideals and attitudes would be likely to respond to novel situations in a very erratic manner even though he possessed much knowledge.

**Achievement versus the activity of doing learning exercises.** The reader's attention has already been called to the distinction between "learning activity" and "achievement," or the changes produced in the learner by the activity. The material product of a student's learning activity usually has little or no direct value. The themes written in English classes, the solutions obtained to problems in mathematics, the manipulations of apparatus in the laboratory, the answers given to questions in the classroom, and other performances required of students seldom contribute directly to the welfare of those giving them or to the welfare of the community. The themes seldom contain anything original; the problems usually have already been solved by others; the answers to the questions are generally known; "experimenting" in the laboratory seldom results in discoveries. In the shop, and sometimes in the laboratory, the product of learning activities may have a value but in general the doing of learning exercises is merely a means to an end, the education of students.

The outcomes of the learning process are subjective. One cannot tell by looking at a student what changes have been made in his mind. His knowledge cannot be measured directly by means of a yard stick or other instruments similar to those used in making physical measurements. We can know his abilities only through his conduct or performance. Consequently, in evaluating achievement the teacher necessarily deals with performances.

In seeking to learn about a student's achievements, teachers frequently ask, "How many problems have you solved?" "Have you read the number of pages assigned?" "Did you find answers to all of the questions which I dictated?" "Have you written up the experiment that you performed in the laboratory?" "Have you translated all of the sentences assigned?" The unfortunate thing about such inquiries

is that they tend to be interpreted literally by both teachers and students. The teacher should think of a student's response to such questions as a convenient though very inaccurate way of telling what he has learned. The number of problems which a student has solved is in itself unimportant. One student may obtain correct answers for all of the problems and learn little or nothing about how to solve problems, while another student may solve only a few of the problems but learn much about problem solving. A student who reads the entire number of pages assigned may have learned much less than one who has read only half of the lesson.

It is not intended to imply that the teacher should not ask his students about the number and magnitude of their learning activities, but he should consider this procedure only as a means for ascertaining what they have learned. Many teachers keep an elaborate record of student performances which show the number of exercises completed by each student and a description of the quality of the performance. Such records may be convenient but they tend to place the emphasis where it should not be. A record of "ability to do" would be much more significant.

**Specifications of the quality of abilities.** A classified list of abilities to be engendered does not constitute a complete statement of the teacher's immediate objectives. It remains to describe the desired quality of the abilities enumerated. The bond between a situation (stimulus) and a response may be formed in several degrees of strength. Ability to operate a typewriter may vary from that represented by typing only a few words per minute to the degree of skill possessed by an expert typist. "Knowledge of a principle" varies from a hazy understanding of it plus ability to repeat it orally or in writing to the ability to apply it in solving problems. Hence, the enumeration of the abilities to be engendered should be supplemented by the specifications of the quality of each.

**"Mastery" of knowledge as an objective.** There are several degrees of the acquisition of knowledge. A person who merely memorizes a statement has acquired the symbols of knowledge. He does not understand their meaning or at least only to a slight extent. A somewhat higher level of learning is attained by one who "understands" the statements which he is able to repeat. He has acquired ideas, not merely symbols. A still higher level is attained when a learner associates his "new ideas" with other knowledge and becomes conscious of their relationships. He is able to explain and to illustrate his statements. He is not dependent upon the language of the author but can express his

ideas in his own words. "Mastery" has been used to designate a still more advanced stage of learning which is characterized by "ability to use knowledge."

"Mastery" as an objective means that the teacher emphasizes the application or use of knowledge rather than merely its acquisition. It is a common observation that students frequently fail to apply what they know or do so very unsatisfactorily. In many cases a truer statement of existing conditions would be that the students have only memorized symbols of knowledge and consequently have no real knowledge to apply. One cause of this condition is the failure of teachers to set objectives that emphasize use of knowledge. The concept of "mastery" as an objective emphasizes the distinction between performance and achievement which we have already pointed out. "Mastery" focuses attention upon the outcomes of learning activity rather than upon the doing of learning exercises.

**Permanency of controls of conduct.** The education of a child looks to his future. Although his school experience may constitute an important phase of his present life and thereby add to his present happiness and well-being, the fundamental justification for our schools, particularly our high schools, must be derived from the preparation which students receive for participation in the activities of adult life. This means that the teacher must endeavor to engender controls of conduct which possess sufficient permanency to be effective five, ten or twenty years after the period of the child's education. Specific habits tend to deteriorate when not used. Ideas, concepts, facts, and principles which are not mastered and well organized are usually quickly forgotten. Ideals and particularly attitudes, interests and tastes tend to be more permanent. Religious beliefs, political affiliations, hobbies, interest in music, a fondness for out-of-door sports, an attitude of fair-mindedness and the like are frequently acquired in childhood and persist as effective controls of conduct throughout life. Hence, when knowledge is the objective, "mastery" and organization should be emphasized. Furthermore, ideals, attitudes, interests and tastes should occupy a prominent place in the objectives of high-school teachers. Otherwise the school will fail to fulfill its function because the outcomes engendered will deteriorate and atrophy so that they will not be effective in controlling conduct in adult life.

**An illustration of immediate objectives in algebra.** Dalman<sup>8</sup> has described a set of objective standards of attainment in first-year algebra

---

<sup>8</sup>DALMAN, MURRAY A. "Hurdles, a series of calibrated objective tests in first year algebra," *Journal of Educational Research*, 1:46-62, January, 1920.



for addition, subtraction, factoring, simultaneous equations and quadratic equations. For each topic four lists of exercises were assembled and labeled C, B, A, and A+, in accordance with the system of school marks employed. The exercises in any one list were judged to be approximately equal in difficulty, but as suggested by their labels the successive lists for any topic increased in difficulty.

These lists of exercises define standards of achievement for the topics of first-year algebra. The goal set for a student is not the doing of so many exercises but the attainment of the ability to do exercises of a certain kind and difficulty. When a student thought he had acquired sufficient habits and knowledge to do the C list of exercises on a certain topic, he was given an opportunity to do so. If he failed to do these exercises correctly, he knew that he had not yet attained the goal set for him and was directed to engage in doing learning exercises in order to acquire sufficient ability to pass the first hurdle. After he had demonstrated that he possessed the ability to do the C list of exercises, he was assigned other learning exercises to engender the additional ability required for the B list and so on.

**An illustration of immediate objectives in terms of exercises to be done.** In a class in Ancient and Medieval History the instructor divided his assignment of topics for notebook work into four lists. For example, on the "Downfall of the Republic," the assignment was as follows:

#### LIST I

1. List the classes of society during this period.
2. Name the leaders of this century and designate the most important services of each.
3. Summarize the wars of Rome and show what was gained or lost by each.
4. List the triumvirates of the period and show why each was formed.
5. What Latin writers made this century famous? Show how.
6. Prepare a three page biography of Julius Caesar.

#### LIST II

7. Prepare a biography of Cicero. (3 pages)
8. Outline Section 83 in Breasted, "Ancient Times."

#### LIST III

9. Outline Section 84 in Breasted, "Ancient Times."
10. Write biographical sketches of Marcus and Sulla.

#### LIST IV

11. Outline Section 85 in Breasted, "Ancient Times."
12. Outline ten pages from Davis Readings, p. 103-42.
13. Outline ten pages from Monroe's Source Book.
14. See your teacher for a special project.



In order to receive a grade of D, the lowest grade recognized by the school as passing, the student was required to do satisfactorily all of the exercises in List I; for a grade of C, all in List II in addition to those of List I; for a grade of B, List I plus List II plus List III and so forth. This illustration for history, unlike that given for algebra, does not define standards of achievement in terms of ability to do. The explicit objective is to do certain exercises rather than to acquire certain abilities. However, the acquisition of knowledge objectives is implicit and could easily be called to the attention of the students. The topics in List IV, required for a grade of A, are not materially different in kind nor in difficulty from those in List I. However, in history the amount of information obtained increases one's understanding of the subject, and the students who completed all four lists undoubtedly acquired more knowledge than those who did only a few of the exercises.

**An illustration of general objectives.** Although the teacher should formulate his immediate objectives in terms of the abilities to be engendered, he may properly make certain explicit specifications in regard to the character of learning performances. The following formulation<sup>9</sup> was worked out by the faculty of one high school and printed on placards which were posted in the various rooms of the building. One feature of these objectives is their organization.

#### SPECIFICATIONS FOR A GRADE OF C

1. *All the work asked of all the class*, such as laboratory notebooks, themes, oral and written tests, exercises, map-books, book reviews, notebooks, translations, and so forth must be handed to the instructor before any credit will be given.

2. This work must be reasonably neat and accurate. *Poorly spelled and illegible work* cannot be accepted for credit.

3. *Good attention and steady employment* during the class hours are required of all pupils who are given credit for a course.

*The quality of the work for a grade of C should be 75 percent perfect.*

#### SPECIFICATIONS FOR A GRADE OF B

1, 2, 3 as previously given.

4. The average of all test grades must be 85 percent perfect.

5. Pupils securing this grade must show some initiative in attacking new work, that is, they should, by consulting such aids as a dictionary, indexes, collateral texts, and so forth, by reviewing what they have already learned, and by paying careful attention to the assignment, be able to get the advanced work without *much help* from the teacher.

6. In every particular the quality of the work for a grade of B should be superior to the quality of the work for a grade of C.

<sup>9</sup>BAILEY, W. W. "The administration of quantitative and qualitative credit for high-school work," *The School Review*, 25:309-10, May, 1917.

A few minor changes have been made in the wording of the following statements in order to assist the reader in understanding them when removed from the original context.

7. Recitations should be well made without the aid of the teacher.  
*The quality of the work for a grade of B should be 85 percent perfect.*

#### SPECIFICATIONS FOR A GRADE OF A

- 1, 2, 3, 5, 7 as previously given.  
8. The average of test grades must be 95 percent perfect.  
9. Persistent daily preparation of assignments with but little urging and with but little help on the part of the teacher.  
10. *Accuracy, neatness, legibility, correct spelling* must be the distinguishing characteristics of the work graded A.  
11. The *quantity of work* done by a pupil receiving grade A should exceed that done by a pupil receiving grade B or C.  
*The quality of the work for a grade of A should be 95 percent perfect.*

**Adjustment of objectives to individual differences.** When we remember that usually the students grouped together for instruction will vary greatly with reference to their capacity to do school work, a number of questions arise relative to the adjustment of immediate objectives to individual differences. Should a teacher set the same objectives for all students? If he attempts to secure "mastery," what is to be done with the very bright? Should the standards of achievement be such that no student will fail?

The usual practice is to set the same objectives for all students taking a given subject and then to describe the degree of their attainments by the grades awarded them. The best students in the class are given a grade of A, signifying a degree of achievement which in some cases approaches "mastery." Others are given a grade of B, signifying a somewhat lower degree of achievement on the same topics. Grades of C and D signify still lower degrees of achievement. All students, however, have studied the same topics and to a considerable extent have attempted the same learning exercises. Their performances on these exercises may approach equivalence in quantity but it is obvious that all have not acquired the same controls of conduct.

The practice described in the preceding paragraph has been severely criticized because under it few if any students other than those receiving a grade of A or B, approach the level of achievement which we have described as "mastery." The result is that those who fall short of "mastery" do not learn anything well. It has been asserted that "half-learning" predominates in our schools. A habit or an item of knowledge which is not learned well enough to be used has little or no value. Therefore, it is contended that we should adjust our objectives to individual differences so that the less capable of our students will approach "mastery" of the topics which they undertake. This would necessitate that the number of topics studied be adjusted to suit the student's capacity to learn or that the time be appropriately varied.

Some "mastery" enthusiasts assert that under an appropriate formulation of immediate objectives no student should "fail," although some students might require a much longer time than others to complete the minimum list of topics.

In the illustration of objective standards of achievement in first-year algebra, an adjustment of objectives to individuals might be secured by requiring all students to acquire ability to do the exercises of the C lists. When a student had attained this objective on a given topic, he should be advised to continue his learning and attempt to attain the higher levels of achievement, unless it appeared that he might employ his time more profitably by beginning on a new topic. In the illustration of general objectives it was implied that an adjustment would be secured by assigning additional topics for study to the more capable students.

**Training in the art of learning as an objective.** Prior to about 1900 "general training," commonly referred to as "formal discipline," was regarded as the paramount objective of education, particularly of that given in the intermediate and high schools. It was contended that the study of certain highly organized school subjects, such as mental arithmetic, English grammar, algebra, geometry and Latin grammar would result in training the mind so that one would be more efficient in doing other types of work. Beginning about 1890 this point of view was vigorously attacked with the result that there was a general reaction from the doctrine of formal discipline.<sup>10</sup> Since 1900 there has been a definite tendency to emphasize the character of content<sup>11</sup> of the subject-matter of our schools and to make it practical. In recent years it has been considered highly important in formulating a course of study, or in writing a textbook, to limit the content to subject-matter that could be shown to be directly useful in certain adult activities.

The movement on the whole has been very beneficial to our schools, but it has been accompanied by an attempt to minimize or even to neglect certain important by-products of learning of which "training in the art of learning" is one. A student learns by doing. We ask him to answer questions, to read textbooks, to solve problems, to prepare

---

<sup>10</sup>For discussion of formal discipline see:

BAGLEY, W. C. *Educational Values*. New York: The Macmillan Company, 1911, Chapter XII.

FREEMAN, F. N. *How Children Learn*. Boston: Houghton Mifflin Company, 1917, Chapter XIII.

JUDD, CHARLES HUBBARD. *Psychology of High School Subjects*. Boston: Ginn and Company, 1915, Chapter XVII.

<sup>11</sup>Except for a few subjects this content is largely knowledge.

written reports and to do other school exercises. If he is to be efficient as a learner, he must be trained in the art of learning, that is, he must be trained in the art of answering questions, in the art of reading a textbook, in the art of solving problems and in the art of preparing a written report, and so on. Some pupils seem to grasp this art easily and with little or no specific training by the teacher and gradually develop an effective technique, but the great majority of students fail to acquire a technique that enables them to be efficient in doing the learning exercises that the teacher assigns.

A teacher's efficiency depends upon the effectiveness of his students as learners. For this reason, if for no other,<sup>12</sup> the teacher should recognize training in the art of learning as one of his important objectives. He should teach his students to read the text book in the way it should be read. If in a particular course the textbook is to be read carefully with attention given to concisely formulated sentences and paragraphs, the student should be trained in this type of reading. If the textbook is to be read merely for the purpose of finding answers to assigned questions, then the teacher should train his students to do this kind of reading well. If the teacher asks his students to prepare themes or other written exercises, he should train them in the art of doing these things. Each teacher should assume the responsibility for making certain that his students become skillful in doing the particular types of learning exercises which he assigns.

One's success in meeting any situation in adult life frequently depends upon his ability to acquire new habits and new knowledge. Hence, if he is skillful in the art of learning, he has at his command a means for meeting his responsibilities. Unlike habits and knowledge, the art of learning when once acquired tends to be permanent. In this respect it resembles an attitude.

**A teacher's real objectives implied in the learning exercises assigned and his tests of achievement.** The formal statement of immediate objectives or aim to which a teacher subscribes does not necessarily specify the goal toward which he directs his students. His real objectives are implied in the learning exercises he assigns and in his tests of achievement. This statement means that the goals toward which a teacher is directing his students are determined by the exercises he asks them to do, including the questions asked during the recitation period and the tests which he administers. The teacher who asks questions calling for mere factual answers, implies the objective of memoriz-

---

<sup>12</sup>Training in the art of learning can be justified as an objective on other grounds.



ing isolated facts. The teacher who quizzes students on the text implies the objective of learning the textbook which is usually interpreted to mean "memorizing the language of the author." The teacher who emphasizes reasons why, cause and effect, comparison, and organization of information implies very different objectives. The teacher of mathematics who stresses correct answers and neglects the procedures by which the answers are obtained implies objectives different from those implied by another teacher who emphasizes the methods by which the student arrives at his answers.

The general principle expressed in the preceding paragraph is one of major importance in considering the immediate objectives of teachers. The formulation of objectives has received emphasis in the activities of educational associations. Several pretentious investigations have been devoted largely or wholly to the determination of the "best" objectives. Such endeavors are commendable but it is necessary to bear in mind that mere "paper" objectives will not affect the work of our schools. When teachers are asked, they are frequently able to state approved objectives. In some school systems they are required to keep a "plan book" and one of the specified items of the plan is the "aim of the lesson." However, observers of actual teaching report that in many instances the objectives implied in the learning exercises, particularly the questions asked, and the evaluation of student performances are very different from those stated by the teacher.

**Comparison of "paper objectives" and the objectives implied in learning exercises.** In a recitation in English literature, which the observer<sup>13</sup> states is not an extreme case, the teacher began the work of the hour by making the assignment for the next day as follows: "Next time please outline the life of Macauley and read all of Macauley in this book." Following this statement an ode composed by a member of the class was read. Then the teacher began a rapid-fire questioning which may be illustrated by the following samples:

As a romanticist, what qualities do you think Wordsworth possessed?

What other romantic element besides power of description?

What other poet wrote on nature?

What differences?

Does any other element enter in?

How does Coleridge introduce the supernatural?

Describe the "Phantom Ship."

Who was "Life in Death?"

In what poem did she appear?

---

<sup>13</sup>The writer is indebted to Chas. W. Knudsen for this and the other reports reproduced in the following pages.



Will you describe her for us?  
 What feature was so particularly striking?  
 What color words did he use?  
 How did he express his ideas on red?  
 What else?  
 Lillian, did you have any other color in mind?  
 When?  
 In the story of the "Ancient Mariner," did he tell the story so that the reader  
 felt he had been on a journey?  
 How did he hold the wedding guest?  
 How did he first hold him?  
 How many guests were walking in this path?  
 Now coming to Keats, was Keats a nature poet?  
 To what extent?  
 If you were to compare Coleridge, Wordsworth, Shelley and Keats, which one has  
 keenest insight into nature?  
 Why do you think so?  
 How about Shelley?

A total of seventy-eight such questions were asked and answered before the gong was sounded at the end of the period, that is, within less than forty minutes or at the rate of about two per minute. One may properly ask, what kind of learning exercises did this teacher ask her students to do? What kinds of mental activity did they engage in? What did they learn? A study of the complete list of questions suggests a classification under three general types. A number of them explicitly call for factual answers which a student would learn by reading his text. The following are samples of this type of question:

In what poem does "Life in Death" appear?  
 Was Keats a nature poet?  
 Did Shelley use flowery words?  
 Who had a morbid outlook on life?

Other questions required students to make inferences but the answers which the teacher accepted were essentially factual. Samples of these are:

As a romanticist what qualities does Wordsworth possess?  
 What elements of the romantic movements do we find in the poem of St. Agnes?  
 What do you suppose Wordsworth believed regarding religion?

A third class of questions is composed of those that required students to explain, such as:

How does he (the poet) express his ideas on red?  
 How did the Ancient Mariner hold the wedding guest?  
 What does "like a star of Heaven" mean?  
 Who are "the heavy-winged thieves?"

The first of these three types of questions implied the objective of memorizing specific facts with little or no attention to their relation to other facts. The second and third types of questions imply the objec-

tive of understanding certain aspects of the poems to which they refer, but it is likely that the knowledge resulting from answering such questions would be lacking in richness of association and organization.

In response to the request of the observer this teacher of English literature stated her aim as being to engender "the ability to recognize good literature and understand and appreciate it." Although this aim is stated in general terms, the lack of agreement between it and the objectives implied in the questions asked and the assignment for the next day's lesson is obvious. The report of this observer furnishes a good illustration of the failure of a teacher to recognize that his real objectives are implied in the exercises which he asks his students to do. Apparently this teacher was unaware that she was stimulating her students to work toward objectives which are incompatible with the general aim that she stated.

A teacher of general science stated his aims as follows:

1. To interest pupils in other sciences, especially chemistry.
2. To stress the practical applications of facts and principles from the textbook.
3. To cultivate an attitude in the minds of the students that problems do exist and to suggest some methods of attacking these problems.

During the first part of the recitation period this teacher asked thirty-three questions such as the following:

What topic are we discussing today?

What is the first thing that we take up in the discussion of heat?

How do we get our heat?

What are some of the different fuels?

Some others?

Chester, discuss the formation of coal.

Are we having much coal formed today?

Can you explain?

With what did formation of coal start?

Do you think our vegetation is so luxuriant?

Would this make any difference?

Kenneth, can you give us something on this?

What name do we have for the first coal?

The next?

The next?

How do we distinguish between anthracite and bituminous coal?

If you were making illuminating gas, what coal would you use?

What are three methods for distributing heat?

Irene, what is conduction?

Can you think of any examples?

Gladys, can you think of any?

Think over this and see if you can think what is happening to the molecules.

James, how is heat distributed by convection?

Harold, can you add anything?

By what method is heat distributed by the sun?

Would you say it moves in currents?

Is the space through which the rays pass hot or cold?

- Do you agree with that, Harold?
- Do you remember when we discussed the color of radiators?
- Why did we decide on a dark colored radiator?
- Will anything be warm unless it absorbs heat?
- Does this space absorb heat?

Following this questioning, the class was divided into five groups and directed to write the discussions of certain topics on the board. The following is a sample:

Heating by means of stoves: Fifty years before the War we had an ordinary stove which was round and it was made of iron and had a door at the bottom and one at the top for the smoke to go out. Then Franklin invented a stove which was a fireplace and it was a fireplace with another iron fireplace inside it. To have the heat the ways you wanted it, there was a damper used to regulate the temperature.

After the students had finished writing on the topics assigned, certain ones were called upon to read the discussions they had written. After the reading of a discussion the teacher asked questions relative to the topic. The following are representative of those asked on the topic, "Heating by means of stoves."

- What was the purpose of the door at the top?
- What was the purpose of the door at the bottom?
- Why was Franklin's invention better than the old method of fireplace?
- By what means was the heat distributed by the fireplace?
- Where did a lot of the heat go?
- How was Franklin's stove an advantage?
- How did it keep the heat inside?
- (Teacher then read a description of Franklin's stove).
- Tell me more about the stoves of today.
- Can you see any reason for letting the oxygen in at the top instead of the bottom?
- How many agree?
- Does anyone see a reason for having the draft at the top?

The assignment which was given just before the bell sounded was: "Tomorrow the assignment will be in Fall, page 247, and exercises 8, 9, 10, 11 to 'radiant heat.' Pay particular attention to the questions and be sure you know what to do when you come to class."

It is difficult to identify the particular objectives which the questions and other exercises of this recitation imply, but there appears to be considerable emphasis upon memorization of the text. Some of the questions asked might have furnished a basis for reflective thinking but the total number asked is so great that much reflective thinking was not possible. This case furnished another illustration of a conspicuous disagreement between a teacher's "paper" objectives and those implied in the exercises he asked his students to do.

**Objectives implied in tests of achievement.** A teacher also reveals his objectives in the tests and examinations which he gives. In some

schools it is the policy that only questions and exercises which the students have explicitly studied during the term shall be included in the final examination. Some teachers are accustomed to give their students a long list of questions a few days prior to the final examination with the understanding that the examination will consist of questions taken from this list. Where such policies prevail, students feel that they have demonstrated the unfairness of an examination when they show that it includes new exercises.

The policy that no new questions are to be asked on a final examination and particularly the practice of furnishing students with a list of questions implies that the objectives of the course are to be obtained by memorizing the responses to be given to particular questions. Although memorization is involved in acquiring knowledge, evidence of the possession of knowledge is furnished by responding to new situations, by overcoming difficulties, and by solving problems. When a student answers a question by remembering how he answered it on some previous occasion or how the author or the teacher answered it, his performance possesses little value as evidence of his knowledge. In fact it merely constitutes evidence that he has memorized certain responses. Hence tests and examinations which do not include some new questions imply specific habit objectives rather than knowledge objectives. If a teacher wishes to measure the knowledge achievements of his students he should include at least some "new" questions in the examination he gives.

What is commonly called the "new examination" is becoming widely used in our schools. This type of examination has merits but when a teacher uses it he implies that he expects his students to learn to do the types of exercises which it includes and it seems probable that the ability to respond correctly to true-false exercises, completion exercises and the like is not the same as the ability that functions in meeting problematic situations requiring reflective thinking. Of course when a new examination is given for the first time the implication is slight and probably will not be detected by the students but if this type or measuring instrument is used regularly students will begin to direct their efforts towards learning to respond to such exercises. Some of the enthusiasts for the new examinations are compiling lists of suitable exercises with the idea that by accumulating a large number they will relieve themselves of the burden of constructing exercises when they wish to measure the achievement of their students. Such a practice is likely to increase the influence of this type of examination upon the immediate objectives of a teacher.

**Value of clearly defined objectives.** "A clear understanding of immediate objectives" will not insure efficient teaching but it constitutes one essential requirement. A teacher who does not know very definitely what abilities he wishes his students to acquire is not likely to be very successful. One reason, perhaps the main reason, why so many teachers fail to engender dynamic knowledge, ideals, attitudes, interests, tastes, and so forth, is that they have only the vaguest sort of notions concerning the nature of these abilities.

This discussion as the title implies has related to the objectives of teachers but it contains important suggestions for supervisors. It is the policy in many schools to require teachers to prepare lesson plans, one item of which is a statement of *stated* or objectives. Considerable importance is attached to these "paper" objectives. Although the cases of classroom instruction cited may not be entirely typical, they do demonstrate that frequently there is considerable divergence between the "paper" objectives of a teacher and his real objectives which are implied in the learning exercises that he assigns and the tests that he gives to measure the achievements of his students. This being the case a supervisor who visits classes may render a valuable service by identifying the implied objectives and then calling the teacher's attention to any discrepancies which exist between them and the "paper" objectives given in the lesson plan.









UNIVERSITY OF ILLINOIS-URBANA



3 0112 08422998